

# Munich Dunkel v1

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- Gravity **11.9 BLG**
- ABV ---
- IBU **29**
- SRM **15**
- Style **Munich Dunkel**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **15 %**
- Size with trub loss **23 liter(s)**
- Boil time **60 min**
- Evaporation rate **6 %/h**
- Boil size **26.7 liter(s)**

## Mash information

- Mash efficiency **67 %**
- Liquor-to-grist ratio **3.73 liter(s) / kg**
- Mash size **20 liter(s)**
- Total mash volume **25.4 liter(s)**

## Steps

- Temp **62 C**, Time **10 min**
- Temp **68 C**, Time **40 min**

## Mash step by step

- Heat up **20 liter(s)** of strike water to **67.6C**
- Add grains
- Keep mash **10 min** at **62C**
- Keep mash **40 min** at **68C**
- Sparge using **12.1 liter(s)** of **76C** water or to achieve **26.7 liter(s)** of wort

## Fermentables

| Type  | Name                                 | Amount          | Yield  | EBC |
|-------|--------------------------------------|-----------------|--------|-----|
| Grain | Monachijski Optima                   | 2.14 kg (39.9%) | 78.9 % | 18  |
| Grain | Pilzneński jasny Optima              | 1.7 kg (31.7%)  | 80 %   | 4   |
| Grain | Pszeniczny jasny Optima              | 0.78 kg (14.5%) | 82.3 % | 3   |
| Grain | Karmelowy jasny Optima 20-30 EBC     | 0.5 kg (9.3%)   | 75.9 % | 30  |
| Grain | Karmelowy ciemny Caraaroma Weyermann | 0.15 kg (2.8%)  | 73.6 % | 350 |
| Grain | Carafa Special I Weyermann 900EBC    | 0.1 kg (1.9%)   | 77.9 % | 900 |

## Hops

| Use for | Name              | Amount | Time   | Alpha acid |
|---------|-------------------|--------|--------|------------|
| Boil    | Iunga             | 16 g   | 40 min | 11 %       |
| Boil    | Lublin (Lubelski) | 30 g   | 10 min | 4 %        |
| Boil    | Cascade           | 50 g   | 5 min  | 6 %        |

## Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

|               |       |       |        |           |
|---------------|-------|-------|--------|-----------|
| Saflager S-23 | Lager | Slant | 500 ml | Fermentis |
|---------------|-------|-------|--------|-----------|